
Nunavik health profile - 2018

The health of mothers and children

Medical-administrative component

PRODUCTION

The team responsible for Aboriginal health considerations at the Institut national de santé publique du Québec (INSPQ) was mandated by the Nunavik Regional Board of Health and Social Services (NRBHS) to produce this profile.

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List of abbreviations and acronyms

BIESP	Bureau d'information et d'études en santé des populations
UTHC	Ungava Tulattavik Health Centre
DES	High school diploma
INSPQ	Institut national de santé publique du Québec
DSD	Digestive system diseases
RSD	Respiratory system diseases
ID	Infectious diseases
MSSS	Ministère de la Santé et des Services sociaux
IUGR	Intrauterine growth retardation
NRBHSS	Nunavik Regional Board of Health and Social Services
SIDS	Sudden infant death syndrome
TCBJ	Terres-Cries-de-la-Baie-James
IT or NIT	Intentional trauma or Non-intentional trauma

Highlights

The practice of midwifery is well-established in Nunavik

There are about 400 births in Nunavik per year, the majority of them in the region's communities thanks to the well-established practice of midwifery in 4 Nunavik communities. The proportion of caesarean deliveries is very low in Nunavik compared to elsewhere in Québec. In addition, the greater access to the practice of midwifery on the Hudson Coast¹ seemingly explains why the proportion of women who must leave this region to give birth is much lower than on the Ungava Coast, where twice as many women must leave the region to deliver their child.

Nunavik has low proportions of intrauterine growth retardation (IUGR) cases, low birth weight babies and babies less than one year of age hospitalized for perinatal disorders (e.g., infections). However, the prevalence of premature births has been increasingly present over the past few years and now shows a significant variance with that elsewhere in Québec. This seems consistent with the fact that hypertension during pregnancy and its consequences on the development of preeclampsia and eclampsia are the most frequent causes of prenatal hospitalization in Nunavik.

The health of infants: infant mortality rate still too high

Perinatal and infant mortality rates in Nunavik are higher than those elsewhere in Québec. Over one third of infant deaths in children less than one year old are associated with sudden infant death syndrome (SIDS) and non-intentional trauma (NIT), causes that are not linked to perinatal disorders.

As for the hospital morbidity² of infants less than one year old, respiratory system diseases (RSD) remain one of the primary causes of hospitalization in Nunavik. Projections reveal that instances of digestive system diseases (DSD) should drop over the next decade, but that the opposite will be true for perinatal disorders.

Population of children between the ages of 1 and 9: numerous avoidable hospitalizations

While the mortality rates for children between 1 and 9 years old are less than those for children under one year of age, they are still higher in Nunavik than elsewhere in Québec. NIT are the leading cause of death in children between 1 and 14 years of age³. RSD, DSD and NIT account for nearly three quarters of the hospitalizations in children between 1 and 9 years of age. And whereas RSD are the leading cause of hospitalizations of children between 1 and 4 years old; the leading cause of hospitalizations among children aged 5 to 9 are DSD.

¹ Whereas three communities on the Hudson Coast offer midwifery services (Salluit, Puvirnituq and Inukjuak), these services are only offered in one community on the Ungava Coast.

² Hospital morbidity indicates all of the short-term hospital stays broken down by reasons for hospitalization. It speaks to hospital activity, namely hospital stays over the course of a given year, with the understanding that a patient can be hospitalized more than once in a same year, with one or more reasons for hospitalization (the "main diagnosis") associated with each stay (Statistics Canada, 2007).

³ For the purpose of analyzing leading causes, the available data concern children between 1 and 14 years old.

1 Objectives and background

Three health profiles⁴ were established for the purpose of providing an overall portrait of the health of the entire Nunavik population. These profiles present the medical-administrative data available up to 2018, and constitute an updated portrait of the health of the Nunavimmiut, given that the previous profiles were prepared in 2014-2015 (NRBHSS, in collaboration with the INSPQ, [2014, 2015](#)). These profiles were developed at the request of the Nunavik Regional Board of Health and Social Services (NRBHSS), in conjunction with the Nunavik Clinical Plan⁵ underway, an initiative that will be used in the preparation of a regional health services offer for 2040.

This profile sets out various indicators regarding the health of Nunavik's families, mothers and children. It begins with an overview of demographic trends involving young children and mothers. It then goes on to address the level of education of mothers, the rates and causes of hospitalization during pregnancy, the means of giving birth, and the practice of midwifery in Nunavik. Next, the profile considers perinatal and infant mortality rates, premature births and low birth weight babies, as well as the primary causes of hospitalization among infants less than one year old. These same health indicators are also provided for children between the ages of 1 and 9 years. Lastly, the possible impacts of this profile on the health services and programs made available will be discussed, with the aim of improving the overall health of the region's families.

To further document the health portrait depicted in this profile, reports published subsequent to the Inuit health survey [Qanuilirpitaa? 2017](#) are cited when relevant. *Qanuilirpitaa? 2017* is a representative health survey conducted in Nunavik in 2017 which addressed a wide range of health indicators. Overall, 1,326 people aged 16 years or more from Nunavik's 14 communities participated ([Hamel et al., 2020](#)). The survey is referred to as *Qanuilirpitaa? 2017* in this profile.

2 Methodological note

2.1 Targeted population and data sources

This profile primarily examines the health of **Nunavik infants and children between the ages of 1 and 9**. The demographic and socioeconomic data presented in this profile were extracted from several provincial medical-administrative databases, including registers concerning demographic events (births and deaths), the MED-ECHO database⁶ on regional hospitalizations, national databases (census information) and data on demographic projections. The primary and secondary sources are noted underneath each figure.

⁴ The first profile, "Sociodemographic background", addresses various demographic and socioeconomic indicators for the entire Nunavik population (INSPQ, 2021a) and the third one, "The health of adults and seniors", explores general health indicators, among them life expectancy and the primary causes of hospitalizations and deaths among Nunavik residents aged 15 years or more (INSPQ, 2021b).

⁵ The Clinical Plan is a document that will be submitted to the Ministère de la Santé et des Services sociaux (department of health and social services) (MSSS) for examination and approval. The objective of this document is to clearly define needs, propose pertinent clinical solutions and develop infrastructure models able to support the necessary clinical organization and meet current needs and needs over the next two decades (NRBHSS, 2021).

⁶ System that comprises data on hospitalizations in Québec (MED-ECHO).

Warning regarding the validity of the Census data: The indicators obtained using data from the 2016 Census should be interpreted with caution as no adjustments were made to compensate for undercoverage. Given the high proportion of nonresponses in Nunavik (15%), there is a significant risk of bias.

Warning regarding the interpretation of projections: Projections must not be interpreted as forecasts of an expected future, but rather, as a possible future should trends continue. As with all statistical projections, the calculation of projections is based on assumptions for predicting population growth. Despite the scientific rigour of these assumptions, actual population growth can differ from what is predicted, particularly at the regional level. These data can also differ slightly from that obtained from other sources, and should thus be interpreted with caution.

Warning regarding the interpretation of data on hospitalizations⁷ in Nunavik: Hospitalization indicators (rates, numbers) are based on the home territory (e.g., sociosanitary regions of Québec⁸) of patients rather than the place of hospitalization (hospital centre). This ensures that the indicators reflect the hospitalization experience of a territory's residents (in this case, Nunavik), regardless of where (the place) they are treated. The main diagnosis is the one used to record hospitalizations; it is the most important trouble or illness presented by the patient during his hospitalization.

In 2012, a significant modification was brought to the criteria for reporting hospitalizations at the UTHC in the provincial Register of hospitalizations. The 24 h criterion for hospitalizations was changed to 4 h; it remained at 24 h for all other regional and provincial health centres. This change triggered a marked increase in hospitalizations for the population of the Ungava Coast during the periods studied.

In preparing this profile, it was difficult to determine whether the increase was solely the result of this administrative artifact or rather, a reflection of an actual increase in hospital morbidity. Furthermore, it was impossible to identify whether all types of hospitalization were touched in the same manner. Likewise, this change in recording criteria complicates the task of comparing the populations of the region's two coasts, as well as those of Nunavik and Québec's other sociosanitary regions. Data is thus provided for general information purposes, but no comparisons were drawn.

Because this profile was primarily designed to support an improvement in the health services provided in the Nunavik region, **the control population, for comparison purposes, is that of Québec.** Whenever possible and relevant, data regarding populations in other regions of Québec were presented; these other regions notably included region 10 (Nord-du-Québec) and region 18 (Terres-Cries-de-la-Baie-James). Drawing comparisons with populations that are in some ways similar to that in Nunavik allows for revealing startling differences in terms of the health experience of the Nunavik population. In an effort to put the rates presented into perspective, a balloon is included (in the figures) to better illustrate, as a number or a percentage, the true proportion for a given period.

In addition to comparison populations, the data are presented according to gender (male/female), age groups of interest (e.g., 0-14 years, 15-34 years, 35-54 years) and home coast (Ungava Coast/Hudson Coast). The age groups illustrated vary according to the data sources used.

2.2 Interpretation of the presented statistics

Working with small samples is unavoidable and must be top-of-mind when interpreting the statistics obtained on Québec's Aboriginal populations, including in Nunavik. In order to take into account the

⁷ The data refer to hospitalizations and not to individuals. This is important, as any one individual could be hospitalized on more than one occasion over a given period (Institut national de santé publique du Québec [INSPQ], 2015b).

⁸ The sociosanitary region targeted in this profile is Nunavik (17), a region that includes the Tulattavik Health Centre in Ungava and the Inuuitsivik Health Centre.

statistical and ethical issues raised, the following rules of good practice were adopted (Centre for Epidemiology and Evidence, 2015):

- A. To avoid any breach of confidentiality**, no statistics based on a numerator of less than 5 should be distributed, nor should certain categories of variables be aggregated to increase their size.
- B. With the goal of increasing the power** (and by extension, the stability) of the statistics presented, years are aggregated into 4- or 5-year periods and age categories are limited to no more than four.
- C. To decrease the risk of bias**, an asterisk (*) is placed after all data with a coefficient of variation between 16.66% and 33.33% to indicate that this information must be interpreted with caution. Data with a coefficient of variation greater than 33.33% are followed by two asterisks (**). These values (**) are provided for information purposes.
- D. Comparisons** that are temporal, territorial or between various subpopulations are only considered statistically significant when there is an absence of confidence interval overlap at 95%⁹. When variances do not meet these criteria, they are clearly identified as non statistically significant “trends” that should be interpreted with caution.

These good practices do not apply to all sources of population data, especially the Census as explained in the box in section 2.1. The various warnings explain why it is not always possible to display all of the desired overlaps (e.g., age, gender and administrative subregion) for all of the available indicators.

3 Data on the health of mothers and children

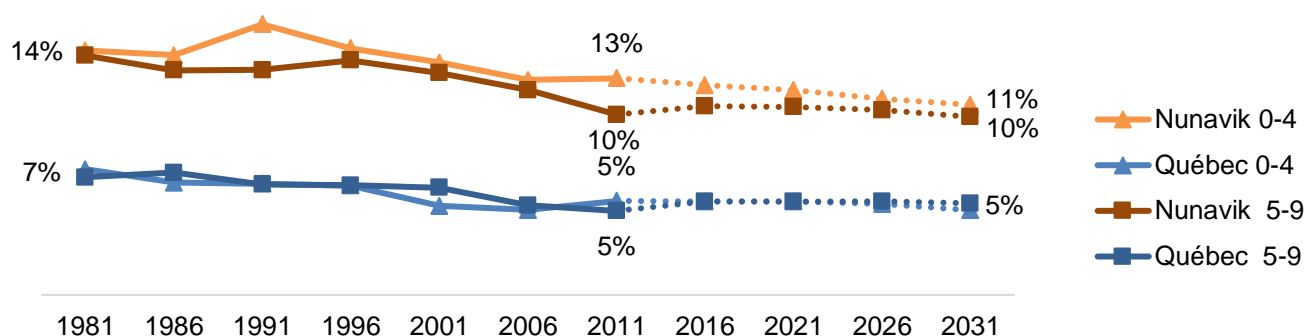
3.1 Demographic and social background of the population

3.1.1 THE POPULATION OF YOUNG CHILDREN CONTINUES TO RISE IN NUNAVIK

The proportion of young children (0-9 years old) in Nunavik is still double that elsewhere in Québec today, and this despite a slight slump in population growth over the past few decades (Figure 1). Projections (dotted lines in Figure 1) point to this variance remaining steady over the next few decades.

⁹ Confidence intervals of 95% are clearly indicated in the graphs; the text, in turn, will clearly mention the statistically significant variance.

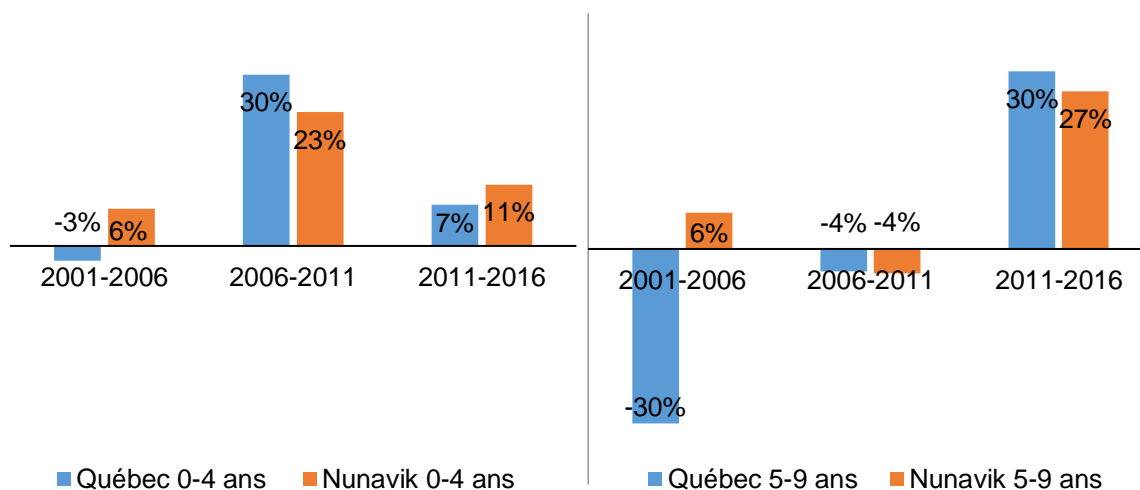
Figure 1 Proportion of the population aged 0 to 4 years and 5 to 9 years, and projections from 2011 to 2031, Nunavik and Québec



Source: Infocentre de santé publique du Québec.
 Note: The data consists of projections beginning in 2011.

The growth rates¹⁰ of the Nunavik population reveal that rates for children aged 0 to 4 years have increased between 2001 and 2011, then dropped between 2011 and 2016, as was the case elsewhere in Québec (graph on the left in Figure 2). As for children aged 5 to 9 years (graph on the right in the same figure), the proportion dropped slightly between 2006 and 2011, to subsequently increase significantly in both Nunavik and Québec (Figure 2).

Figure 2 Average annual growth rate of the population between 0 and 4 years of age and that between 5 and 9 years of age, Nunavik and Québec, 2001-2006, 2006-2011 and 2011-2016

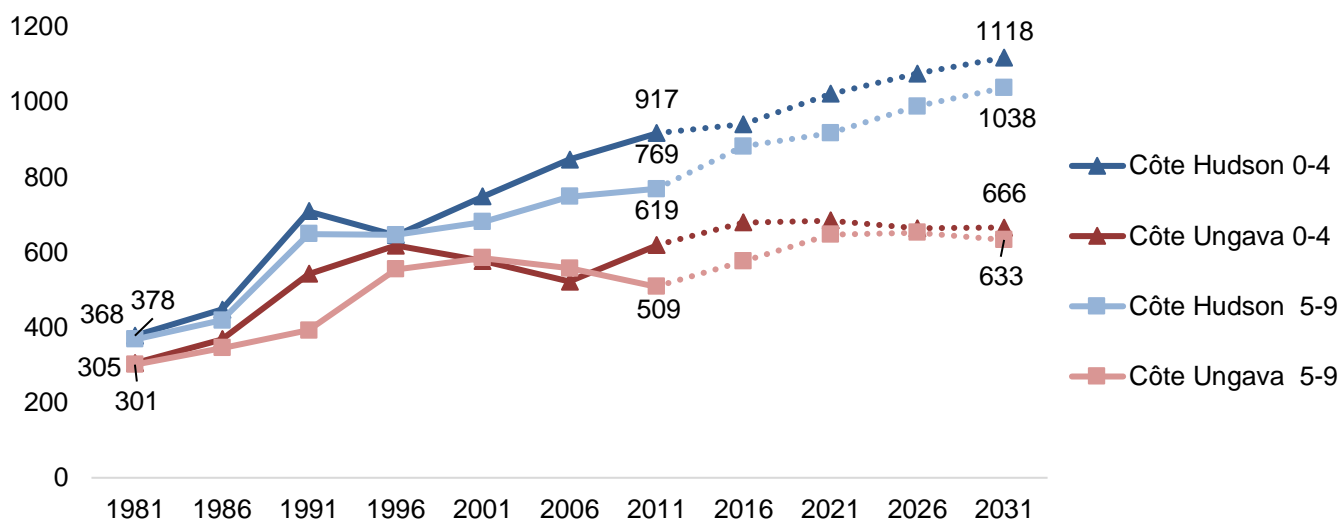


Source: Infocentre de santé publique du Québec.
 Note: The data consists of projections for Nunavik, beginning in 2011.

Figure 3 depicts similar projections on both coasts as regards the number of children between the ages of 0 and 9. A slight rise in the population growth of children between the ages of 0 and 9 was also observed on both coasts, pointing towards more than 3,000 children by 2031 (total not indicated in the figure). Based on projections, children will continue to represent a greater population in the communities on the Hudson Coast, compared to those on the Ungava Coast.

¹⁰ The natural growth rate is due to the difference between number of births and number of deaths (Government of Canada, 2013).

Figure 3 Number of children aged 0 to 4 years and 5 to 9 years, and projections from 2011 to 2031, Nunavik and Nunavik coasts

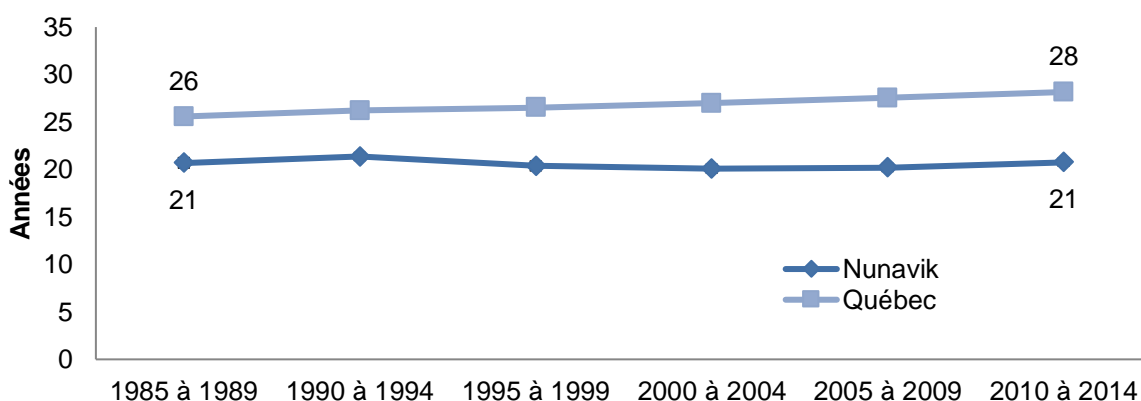


Source: Infocentre de santé publique du Québec.
 Note: The data consists of projections beginning in 2011.

3.1.2 NUMEROUS YOUNG PARENTS

The growth in the population of young children is a reflection of sustained fertility rates in the region, particularly among women under 20 years of age¹¹. Over the past years in Nunavik, the average age at which women gave birth to their first child remained stable, at 21 years (Figure 4). The variance in average age of mothers between Québec and Nunavik nonetheless went from 5 to 7 years over the periods examined. *Qanuilirpitaa? 2017* looks at age at the time of first pregnancy according to marital status, education, employment, income, home coast and size of the community (Moisan et al., 2021).

Figure 4 Average age of mothers at the birth of their first child, Nunavik and Québec, 1985-1989 and 2010-2014



Source: Infocentre de santé publique du Québec.

3.1.3 IN SHORT

1. The Nunavik region boasts a young population, with nearly 12% of its inhabitants less than 10 years old. Despite this proportion having decreased slightly over the last few decades, the number of children in Nunavik continues to increase.
2. Young women in Nunavik tend to become mothers at the onset of adulthood, with the average mother being 21 years old when she gives birth to her first child.

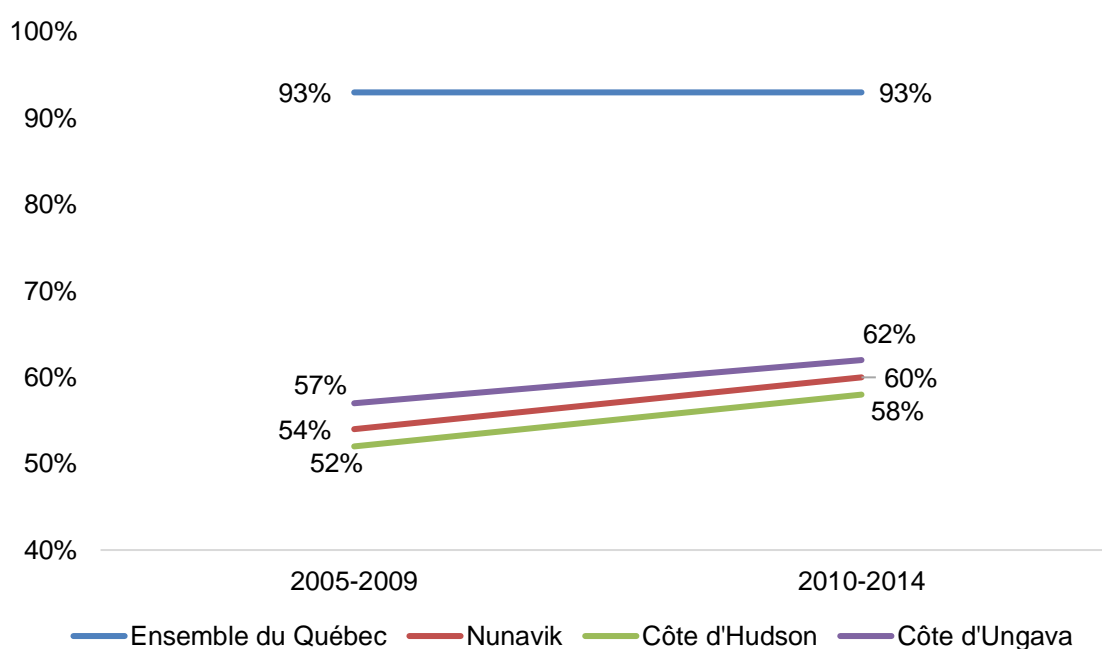
¹¹ See Figure 11 in the *Nunavik health profile 2018: sociodemographic background* (INSPQ, 2021a).

3.2 The health of mothers

3.2.1 LEVEL OF EDUCATION OF MOTHERS

The proportion of children born to a mother who completed a DES grew between 2005-2009 and 2010-2014 in Nunavik (Figure 5); nonetheless, the figures in question are not at the same level as those elsewhere in Québec. In addition, *Qanuilirpitaa? 2017* reveals that there is no difference between men and women as regards obtention of a high school diploma (DES), and this regardless of age ([Riva et al., 2020](#)).

Figure 5 Proportion of births by women who obtained a DES, Nunavik, Nunavik coasts and Québec as a whole, 2005-2009 and 2010-2014



Source: Infocentre de santé publique du Québec.

Note: The question concerning education had to be modified in 2005. Since then, mothers record the level of education that they have successfully completed.

3.2.2 HOSPITALIZATIONS WHILE PREGNANT

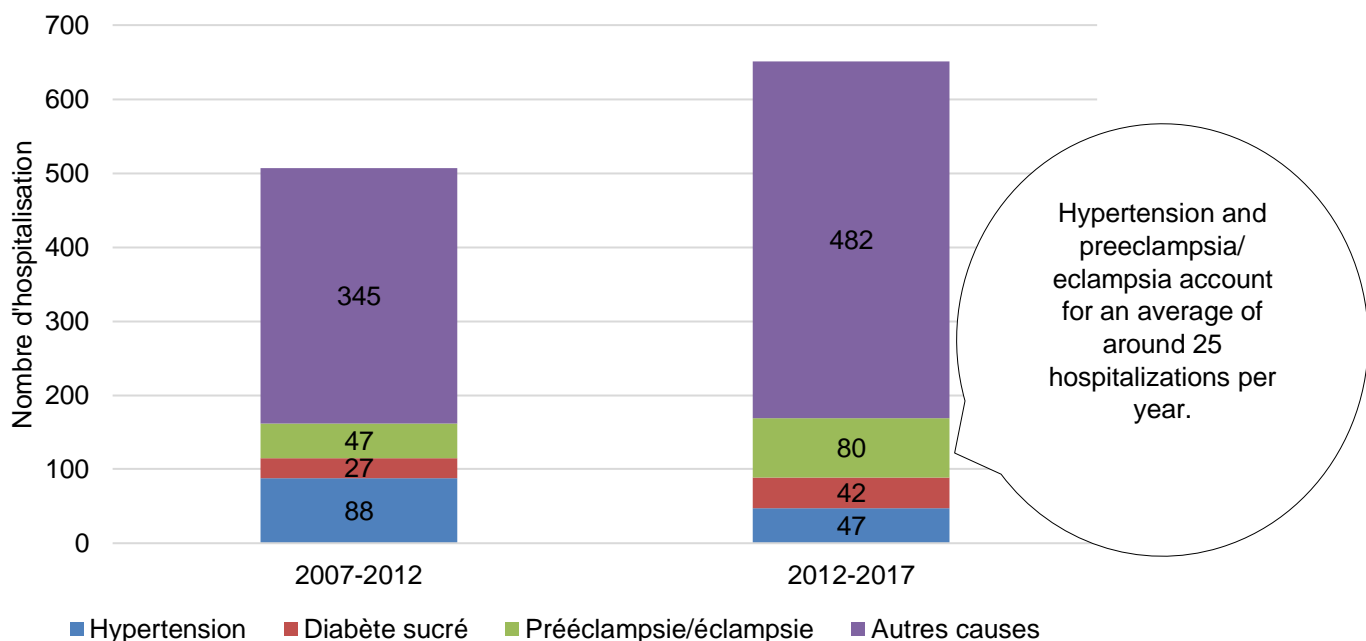
Figure 6 depicts the number of hospitalizations while pregnant, according to leading causes, for two specific time periods. When calculating the annual data in Nunavik for the period from 2012 to 2017, an average of 130 hospitalizations per year were the result of complications during pregnancy, among these hypertension⁶, preeclampsia/eclampsia¹², diabetes mellitus¹³ or others¹⁴. One out of every five hospitalizations was associated with hypertension during pregnancy and the onset of preeclampsia/eclampsia. The average annual number of hospitalizations due to diabetes mellitus during pregnancy went from 5 to 8 cases between 2007-2012 and 2012-2017 (annual data not depicted on graphs).

¹² High blood pressure (or hypertension) is an abnormally high pressure of the blood in the arteries. When hypertension is accompanied by poor functioning of certain organs, the situation is deemed to constitute a case of preeclampsia. Preeclampsia can come with certain complications (*Équipe Naître et grandir*, 2020b). Eclampsia is characterized by generalized and unexplained comitial crises following preeclampsia (Dulay, 2020).

¹³ The term "diabetes mellitus" includes gestational diabetes and pre-existing type 2 diabetes.

¹⁴ The following causes are included under "other": hemorrhaging, multiple pregnancy and prolonged pregnancy.

Figure 6 Number of hospitalizations during pregnancy by primary cause, Nunavik, 2007-2012 and 2012-2017



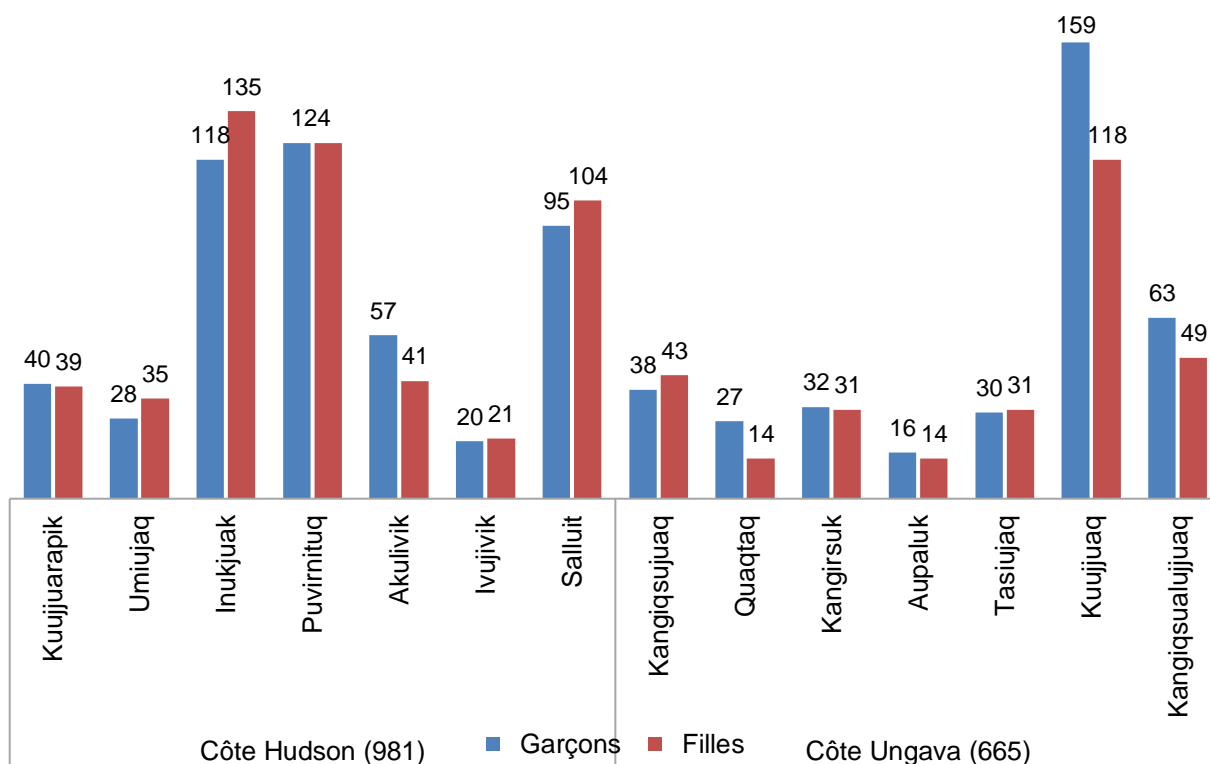
Source: Infocentre de santé publique du Québec.

3.2.3 DELIVERIES AND BIRTHS

Nunavik recorded just over 1, 600 live births between 2010 and 2014, for an average of around 400 births per year (Figure 7). 1,100 of these births occurred in Nunavik (not indicated). The distribution of births varies on the basis of community size: the larger communities, such as Inukjuak, Puvirnituiq, Salluit and Kuujuaq, have a high number of births than do the smaller communities.

Figure 7 also shows that two thirds of the children born each year in Nunavik are born to mothers living on the Hudson Coast. The percentage of boys is similar from one community to the next, and falls between 45% and 57% for most of the communities (percentage not indicated). There is one exception, the community of Quaqtuaq, where the proportion of boys was 66% for the period between 2010 and 2014. This being said, caution is recommended, as there were but 41 births in all over this entire period.

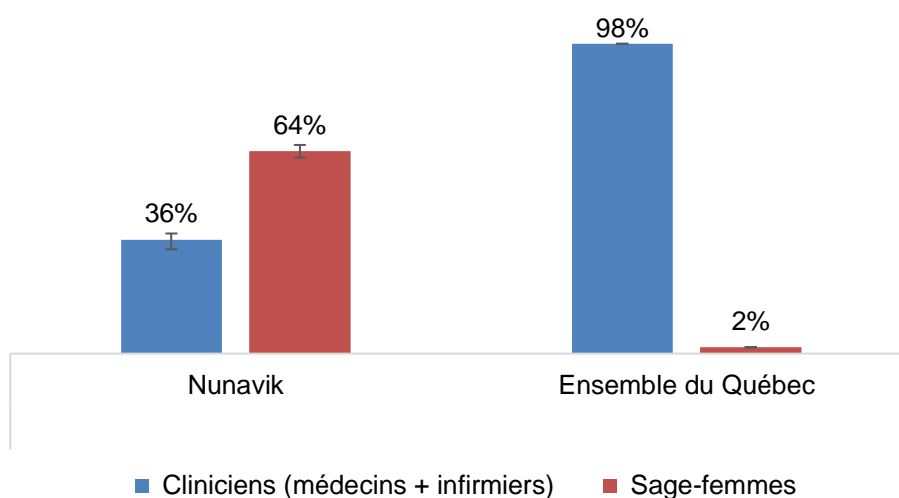
Figure 7 Total number of births according to the home community of the mother, Nunavik communities, 2010-2014



Source: MSSS, Register of births. Special compilation, BIESP.

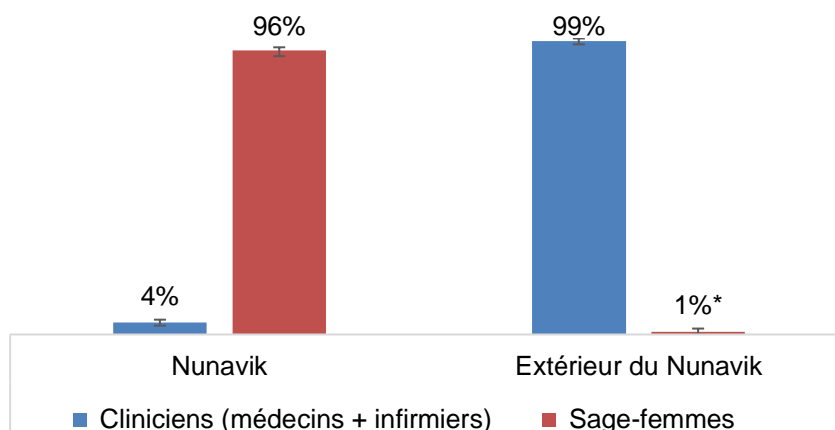
The practice of midwifery has been ongoing in Nunavik for many years, particularly in three communities on the Hudson Coast (Puvirnituq, Inukjuak and Salluit) and one community on the Ungava Coast (Kuujuuaq). Nearly two thirds of all women living in Nunavik give birth with the help of a midwife (Figure 8). This proportion is significantly greater than that observed for all births in Québec. Figure 9, unlike Figure 8, provides data based on the place of birth. According to this figure, over 9 out of every 10 births in Nunavik were assisted by a midwife.

Figure 8 Proportion of births according to the type of person assisting the birth, based on the place of residence of the mother, Nunavik and Québec as a whole, 2010-2014



Source: MSSS, Register of births. Special compilation, BIESP.

Figure 9 Proportion of births according to the type of person assisting the birth, based on the place of birth of the infant, Nunavik and outside of Nunavik, 2010-2014

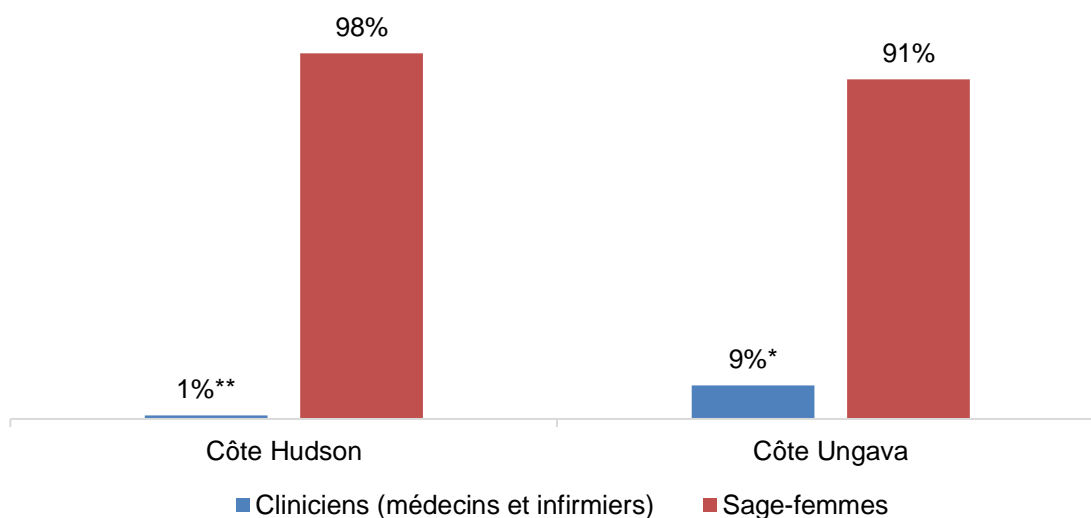


Source: MSSS, Register of births. Special compilation, BIESP.

*Coefficient of variation between 16.66% and 33.33%. The value must be interpreted with caution.

Figure 10 reveals that the proportion of births assisted by a clinician is very low on both Nunavik coasts. It can also be seen that the rate of births assisted by a midwife is slightly higher on the Hudson Coast than on the Ungava Coast.

Figure 10 Proportion of births according to the type of person assisting the birth, Nunavik coasts, 2010-2014



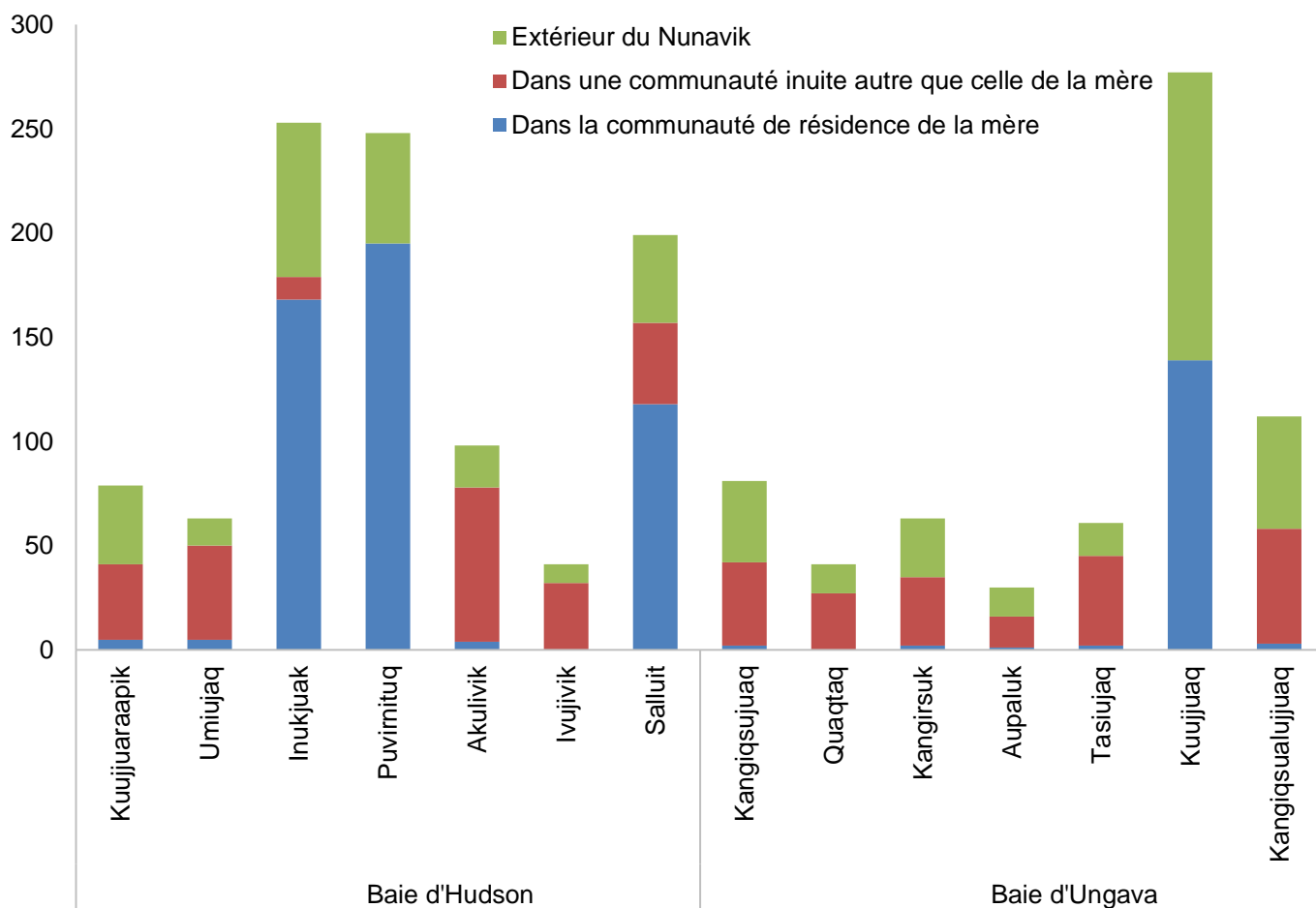
Source: MSSS, Register of births. Special compilation, BIESP.

* Coefficient of variation between 16.66% and 33.33%: The value must be interpreted with caution.

** Coefficient of variation greater than 33.33%. The value is presented for information purposes only.

Likewise, we note that the proportion of births in the home community of the mother is much higher in communities with a birthing centre (Kuujjuaq, Puvirnituq, Salluit and Inukjuak) than the communities without one (Figure 11).

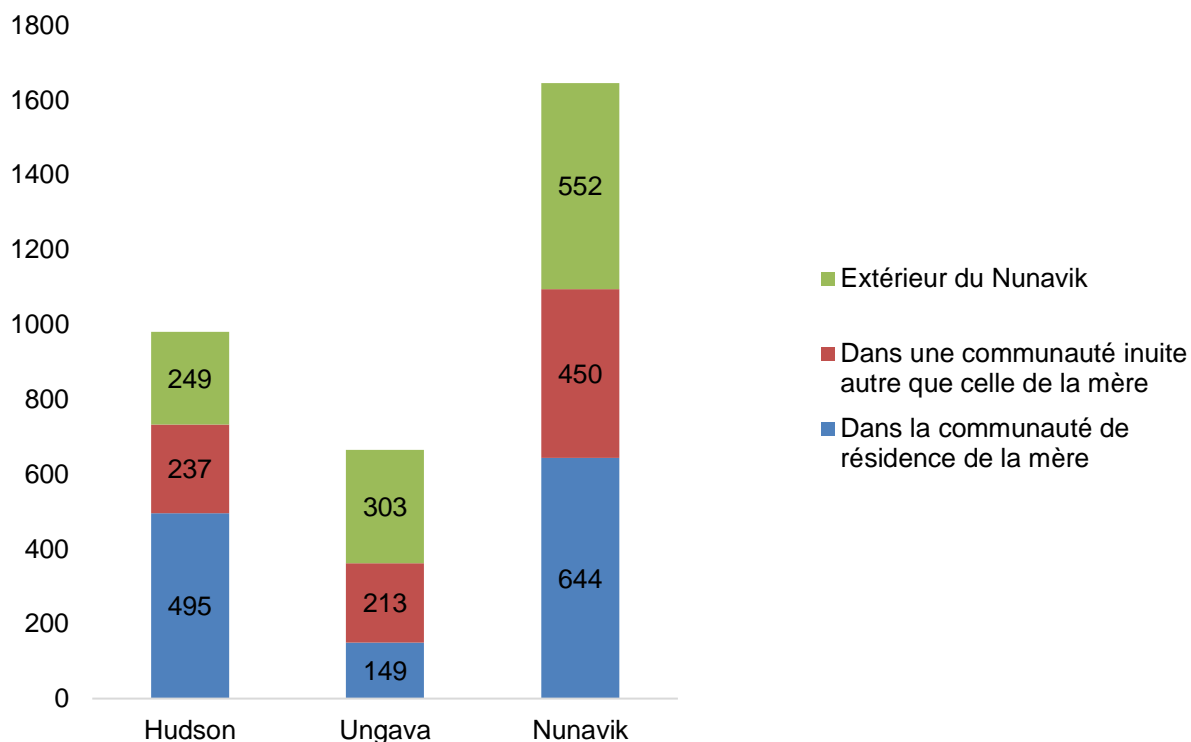
Figure 11 Number of births according to the place of residence of the mother, Nunavik communities, 2010-2014



Source: MSSS, Register of births. Special compilation, BIESP.
Note: Seeing as many values are below 10, the numbers for each column are not displayed.

The growth of the practice of midwifery is what allows over two thirds of Nunavik women to give birth in the region. That being said, the proportion of women who can give birth in their home community is nearly twice as high on the Hudson Coast than on the Ungava Coast: (Figure 12). The degree of trust in midwives is notably addressed in the report entitled *Sexual and Reproductive Health in Qanuilirpita? 2017* (Moisan et al., 2021).

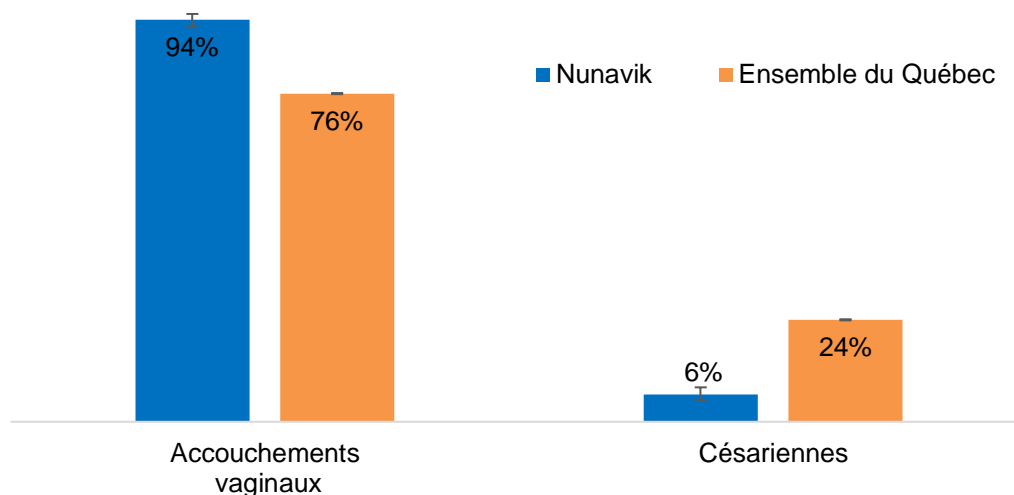
Figure 12 Number of births according to the place of birth of the infant, Nunavik and Nunavik coasts, 2010-2014



Source: MSSS, Register of births. Special compilation, BIESP.

Also, the proportion of caesarean deliveries is four times less for women living in Nunavik than for Québec as a whole (Figure 13).

Figure 13 Proportion of vaginal and caesarian deliveries, Nunavik and Québec as a whole, 2010-2014



Sources: MSSS, Register of hospitalizations MED-ECHO and Register of births. Special compilation, BIESP.

Note: Given that the data on these deliveries is taken from the Register of hospitalizations, they exclude all deliveries elsewhere than in a hospital setting. In Nunavik, this represents around 30% of births (around 45% on the Hudson Coast and 6% on the Ungava Coast). The total number of births and the number of vaginal births are thus underestimated, and the total number of caesarian births overestimated.

3.2.4 IN SHORT

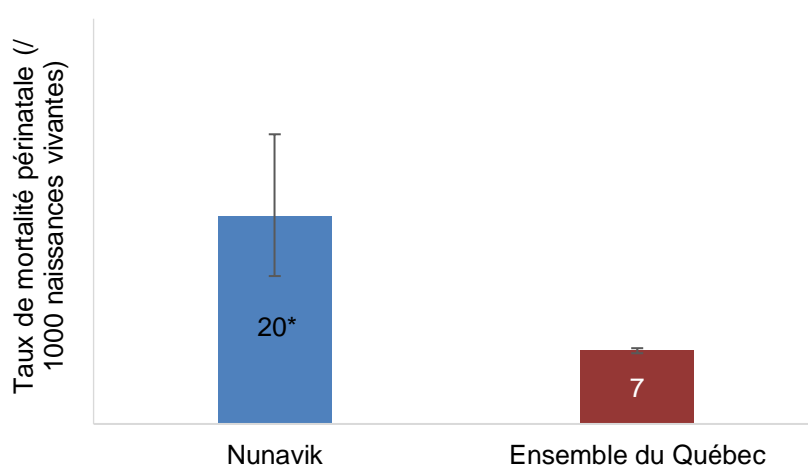
1. Pregnancy-related hypertension and the ensuing complications (preeclampsia or eclampsia) are responsible for an average of over 30 or so hospitalizations per year in Nunavik; they are also one of the leading reasons for hospitalization during the course of pregnancy in the region.
2. 400 or so births are recorded in Nunavik each year. Two thirds of these births take place on the Hudson Coast, according to the place of residence of the mother.
3. Over 95% of all births in Nunavik are assisted by midwives, with the result that nearly 7 out of 10 women can deliver their child in the region.

3.3 The health of infants less than one year old

3.3.1 PERINATAL AND INFANT MORTALITY

As regards perinatal mortality¹⁵, an average of 4 perinatal deaths were recorded in Nunavik between 2010 and 2014¹⁶ (Figure 14). This rate is significantly higher than the rate for Québec over the same period; however, variances should be interpreted with caution, as there is a certain statistical instability associated with this measurement.

Figure 14 Perinatal mortality rate (/1000), Nunavik and Québec as a whole, 2010-2014



Source: Infocentre de santé publique du Québec.

*Coefficient of variation between 16.66% and 33.33%. The value must be interpreted with caution.

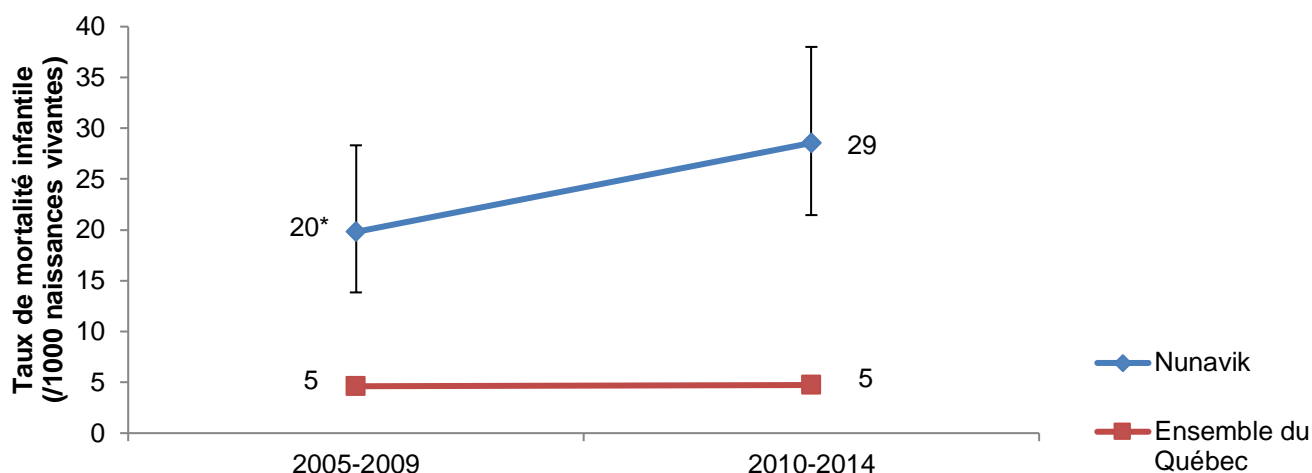
As for infant mortality rates¹⁷, they are 4 to 6 times higher in Nunavik than elsewhere in Québec for all of the periods considered (Figure 15). The exact number of deaths is not available on an annual basis, given that these rates represent an average of fewer than 10 or so deaths per year. The upward trend observed for the infant mortality rate is not statistically significant.

¹⁵ The perinatal mortality rate includes stillbirths as well as deaths occurring within 7 days of an infant's birth, regardless of weight at birth and duration of pregnancy. Stillbirths correspond to fetal deaths (Statistics Canada, 2010).

¹⁶ The perinatal mortality rate in Nunavik for 2005-2009 could not be displayed (numerator of less than 5).

¹⁷ The infant mortality rate is defined as the number of deaths of children aged less than one year per 1,000 live births (OCDE, 2021).

Figure 15 Infant mortality rate (/1000), Nunavik and Québec as a whole, 2005-2009 and 2010-2014



Source: Infocentre de santé publique du Québec.

* Coefficient of variation between 16.66% and 33.33%. The value must be interpreted with caution.

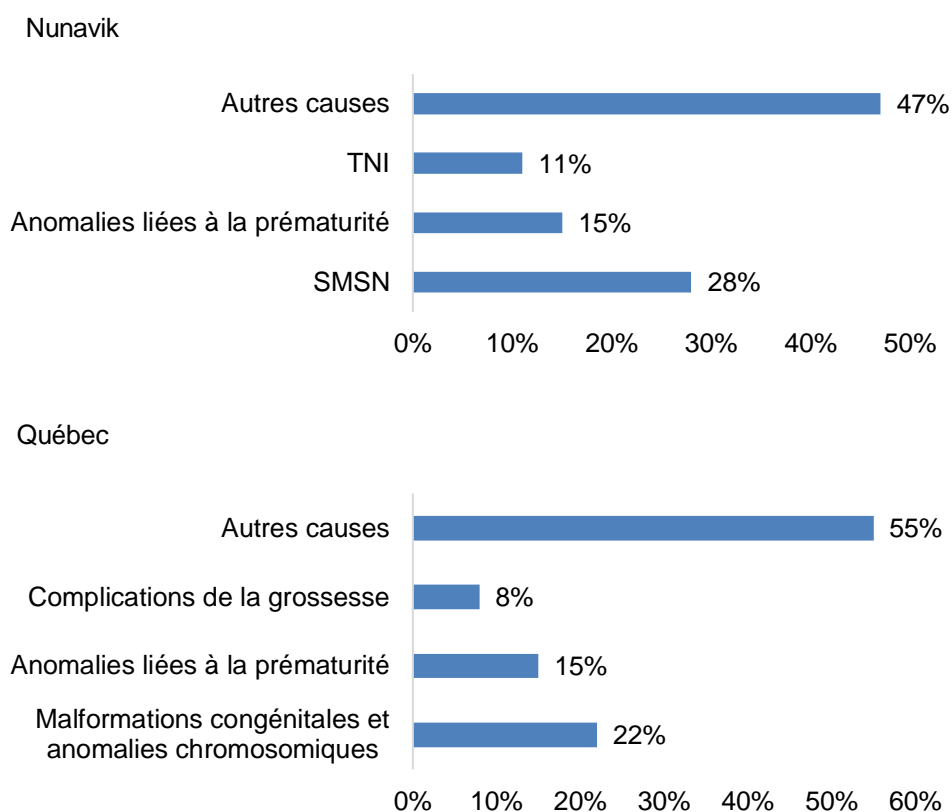
The main causes of infant mortality are generally not the same in Nunavik as they are elsewhere in Québec. Whereas in Nunavik, over one third of all deaths are associated with sudden infant death syndrome¹⁸ (SIDS; 28%) and non-intentional trauma¹⁹ (NIT; 11%), elsewhere in Québec congenital malformations²⁰ (22%) and pregnancy-related complications (8%) are at cause for nearly one third of all infant deaths (Figure 16). Perinatal disorders²¹ are a major cause of infant deaths in Québec. In Nunavik, the most prevalent causes involve conditions that are unrelated to the perinatal period.

¹⁸ Sudden infant death syndrome (SIDS) is the unexpected death of an infant. This syndrome generally occurs while the infant is sleeping; more specifically, a healthy baby falls asleep then stops breathing, for no obvious medical reason (*Équipe Naître et grandir, 2020a*).

¹⁹ Non-intentional trauma (NIT) usually refer to injuries resulting from an accident or “unvoluntary” event, such as a vehicle accident, a fall, etc. (Institut national de santé publique du Québec [INSPQ], 2015a).

²⁰ Congenital malformations, also called birth defects, congenital defects or congenital anomalies, are usually structural or functional anomalies. They are physical malformations that are present prior to birth and usually become apparent during the first year after an infant’s birth (Public Health Agency of Canada, 2013).

²¹ In medical lingo, a disorder (or affliction or ailment) refers to a category of illness (DocThom, 2016). As for perinatal disorders, these are disorders that develop during the perinatal period, even if morbid manifestations or death only occur at a later point. Perinatal disorders include all of the afflictions or conditions related to the perinatal period, such as infections, hemorrhaging or blood conditions resulting from complications with regard to the pregnancy, labour or delivery, and this even if these conditions only present past the perinatal period.

Figure 16 Causes of infant mortality, Nunavik and Québec, 2010-2014

Source: Infocentre de santé publique du Québec.

Note: The “other causes” category includes all other documented causes, among them respiratory distress in infant, neonatal aspiration syndromes, bronchitis and acute bronchitis.

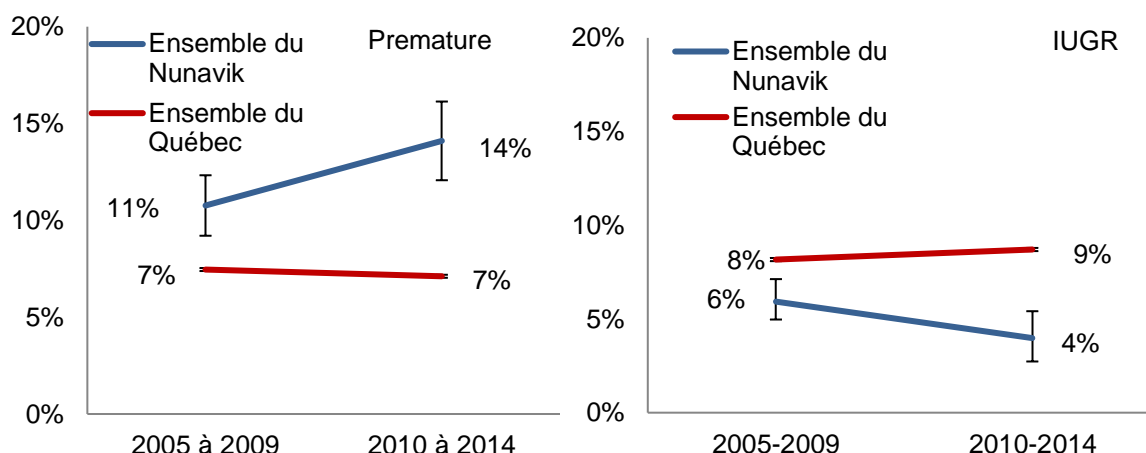
3.3.2 PREMATURE BIRTHS AND LOW BIRTH WEIGHT

The outcomes at birth are somewhat more favourable in Nunavik than in Québec as a whole. In fact, while the proportion of premature births²² is greater than it is in Québec, the proportions of intrauterine growth retardation (IUGR)²³ were lower than those for Québec for the two periods under consideration (Figure 17).

²² The term premature births refers to live births at a gestational age of less than 37 completed weeks (Préma-Québec, 2021).

²³ IUGR refer to living infants whose weight at birth is below the 10th percentile according to gestational age (Jen, 2011).

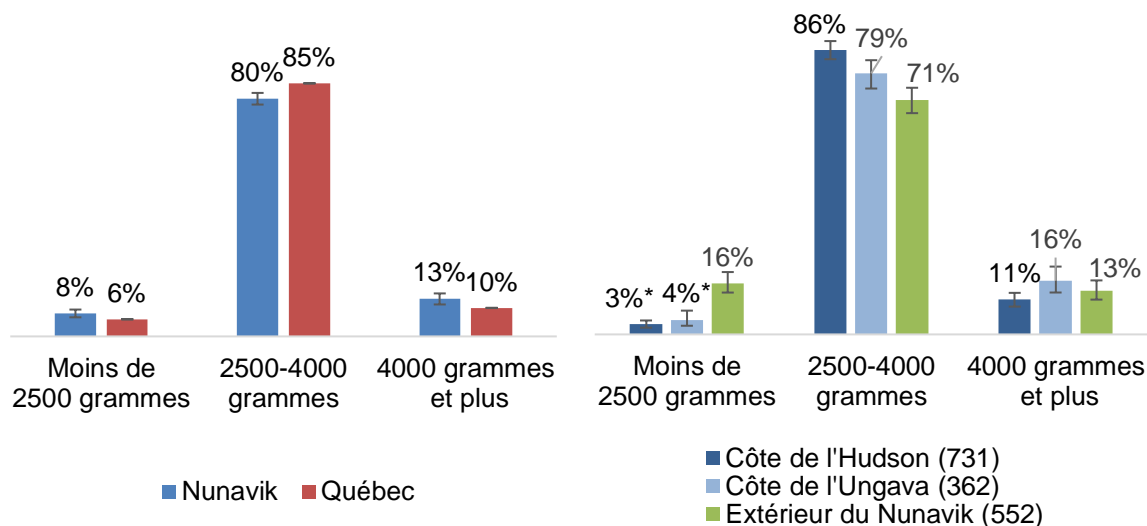
Figure 17 Proportion of premature births and IUGR, Nunavik and Québec, 2005-2009 and 2010-2014



Source: Infocentre de santé publique du Québec.

Likewise, the breakdown of births according to weight in Nunavik is similar to that for the population of Québec (graph on the left in Figure 18). The graph on the right in Figure 18 shows that a higher proportion of women living in Nunavik and who gave birth outside of Nunavik deliver infants weighing less than 2,500 grams at birth, compared to the women who deliver their babies in the region. This observation is consistent with the fact that women with high-risk pregnancies are mostly the ones who give birth outside of the region.

Figure 18 Proportion of births by mothers living in Nunavik, according to weight and place of birth, Nunavik and Québec, Nunavik coasts and outside of Nunavik, 2010-2014



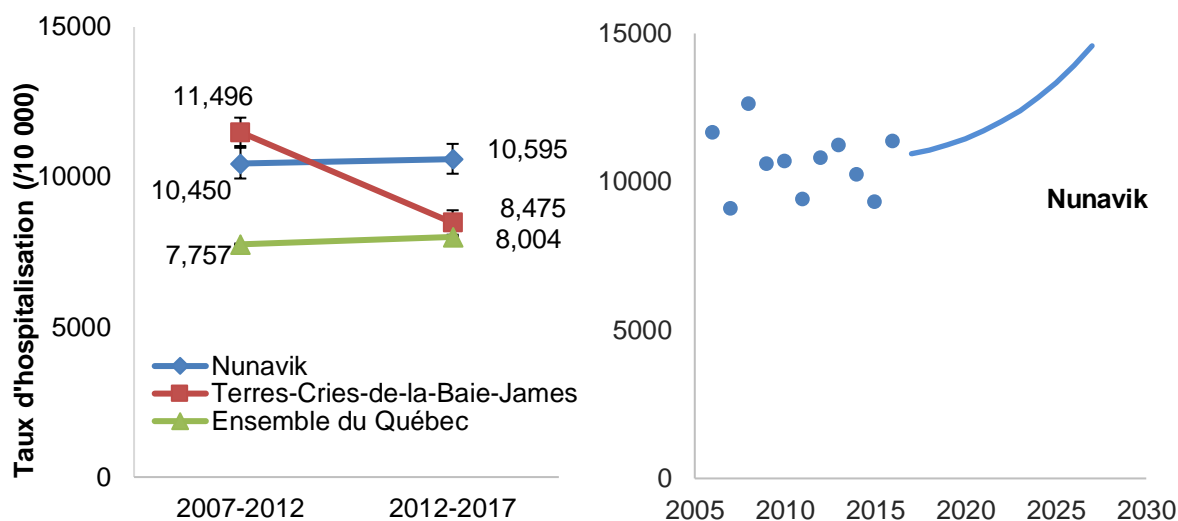
Source: MSSS, Register of births. Special compilation, BIESP.

* Coefficient of variation between 16.66% and 33.33%: The value must be interpreted with caution.

3.3.3 HOSPITAL MORBIDITY OF INFANTS LESS THAN ONE YEAR OLD

The hospitalization rate of infants less than one year old in Nunavik appears to have remained relatively stable over the course of the periods considered (Figure 19). Projections nonetheless indicate that these rates should increase in Nunavik over the next years (graph on the right in Figure 19).

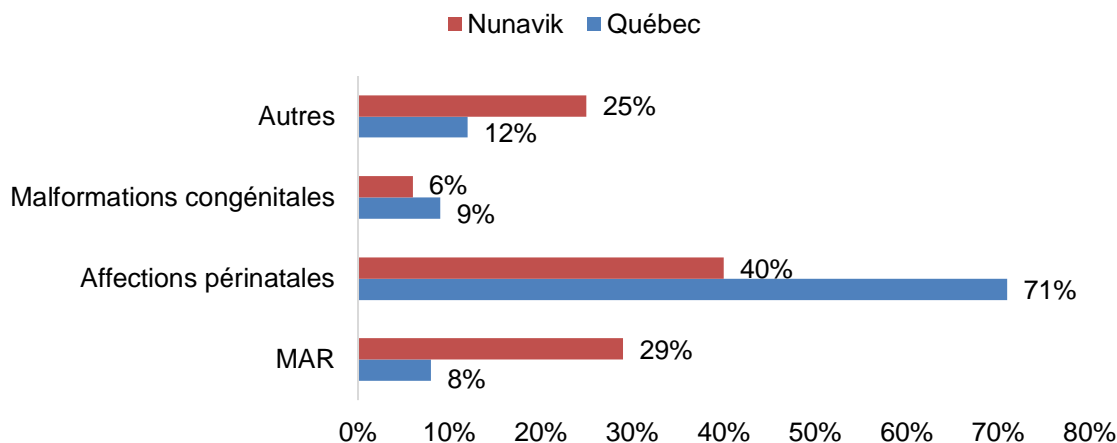
Figure 19 Hospitalization rates for infants aged 0 to 1 year (/10 000), Nunavik, Terres-Cries-de-la-Baie-James region and Québec, 2007-2012 and 2012-2017, and annual projections for Nunavik, 2006 to 2027



Sources: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec. Data from 2006 to 2016 (graph on the right, data for Nunavik) were provided by the Infocentre, and projections for 2017 to 2027 were calculated by Ernest Lo.
Note: Data in the graph on the right are projections as of 2017 (solid line).

The primary causes of hospitalization for infants less than one year old in Nunavik are perinatal disorders, followed by respiratory system diseases²⁴ (RSD) and other causes (Figure 20). Congenital malformations are only infrequently the cause of hospitalization in Nunavik. Elsewhere in Québec, the vast majority of hospitalizations are due to perinatal disorders.

Figure 20 Causes of hospitalization among infants less than one year old, Nunavik and Québec, 2012-2017

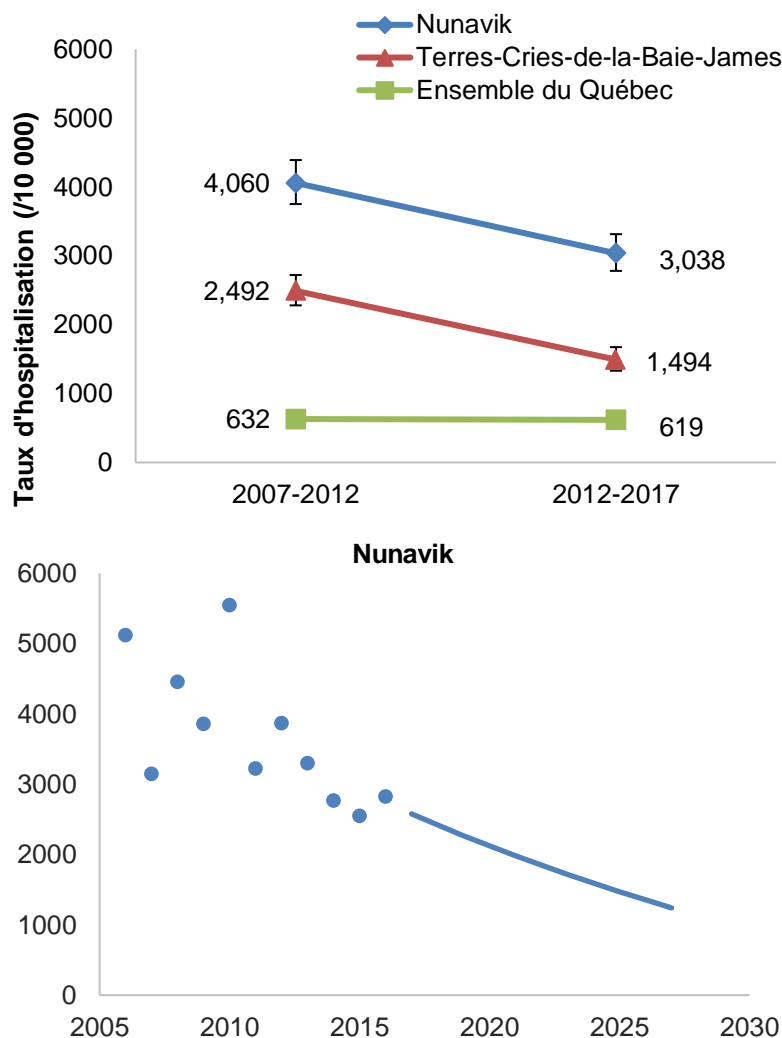


Source: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec.
Note: The “other causes” include all other documented causes, notably diseases of the eye and its adnexa, diseases of the ear and the mastoid process, circulatory system diseases (CSD), digestive system diseases (DSD), etc.

²⁴ All respiratory system diseases combined, notably pneumonia and the flu, bronchitis, emphysema and asthma (Government of Canada, 2019).

As regards RSD (Figure 21), hospitalization rates have decreased between 2007-2012 and 2012-2017 (graph at the top in Figure 21). Projections indicate that these rates will continue dropping in Nunavik over the coming years (solid line in the graph at the bottom in Figure 21).

Figure 21 Hospitalization rates for infants less than one year old (/10 000), RSD, Nunavik, Terres-Cries-de-la-Baie-James region and Québec, 2007-2012 and 2012-2017, and annual projections for Nunavik, 2006 to 2027

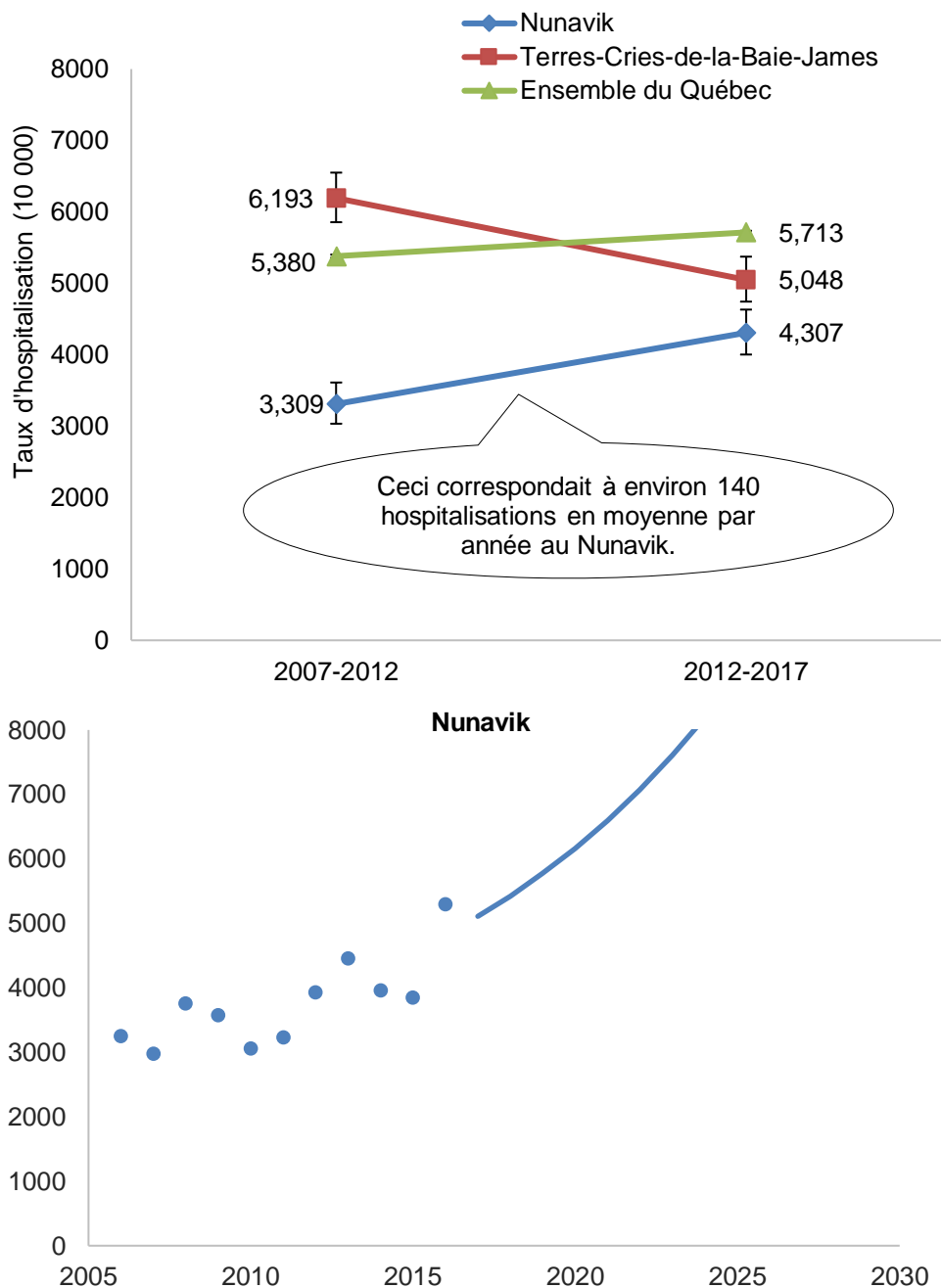


Sources: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec. Data from 2006 to 2016 (graph on the top) were provided by the Infocentre, and projections for 2017 to 2027 were calculated by Ernest Lo (graph on the bottom).

Note: The data in the graph at the bottom are projections as of 2017 (solid line).

As for perinatal disorders in Nunavik (Figure 22), hospitalization rates are relatively low (graph at the top). These rates have nonetheless increased significantly these past few years, and projections show that this increase will be maintained over the next decade (graph at the bottom).

Figure 22 Hospitalization rates for infants less than one year old (/10 000), perinatal disorders, Nunavik, Terres-Cries-de-la-Baie-James region and Québec, 2007-2012 and 2012-2017, and annual projections for Nunavik, 2006 to 2027

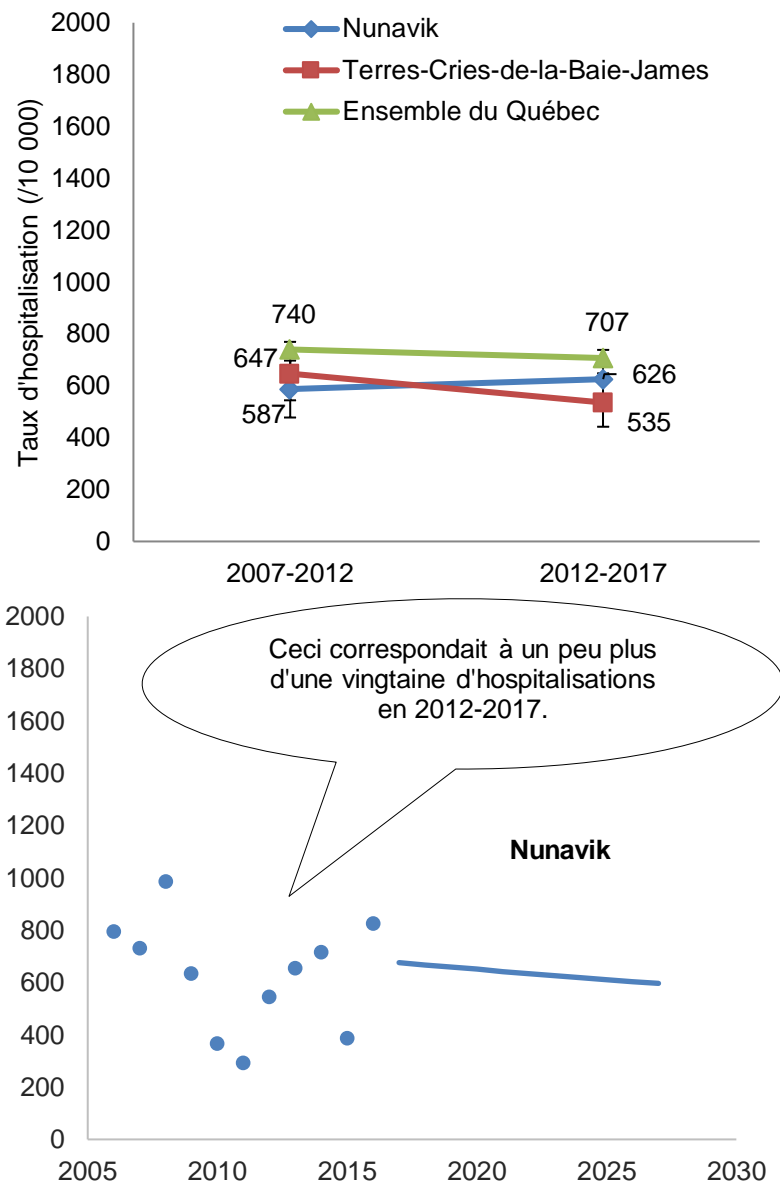


Sources: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec. Data from 2006 to 2016 (figure on the bottom) were provided by the Infocentre, and projections for 2017 to 2027 were calculated by Ernest Lo.

Note: The data in the graph at the bottom are projections as of 2017 (solid line).

As for congenital malformations in Nunavik (Figure 23), they are a less important cause of hospital morbidity than are RSD and perinatal disorders. Also, projections indicate that hospitalization rates for congenital malformations should remain stable over the coming years.

Figure 23 Hospitalization rates for infants less than one year old (/10 000), congenital malformations, Nunavik, Terres-Cries-de-la-Baie-James region and Québec, 2007-2012 and 2012-2017, and annual projections for Nunavik, 2006 to 2027



Sources: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec. Data from 2006 to 2016 (graph on the top) were provided by the Infocentre, and projections for 2017 to 2027 were calculated by Ernest Lo (graph on the bottom).

Note: The data in the graph at the bottom are projections as of 2017 (solid line).

3.3.4 IN SHORT

1. The infant mortality rate in Nunavik is four times higher than that in Québec. This corresponds to an average of under 10 deaths a year for Nunavik. A large portion of these deaths are associated with sudden infant death syndrome and non-intentional trauma, causes that are not linked to perinatal disorders.
2. Nunavik has greater proportions of premature births than those observed elsewhere in Québec, but lower proportions of intrauterine growth retardation.
3. Hospitalization rates of children less than one year old with congenital malformations in Nunavik should remain stable over the coming years.
4. Hospitalization rates in Nunavik for perinatal disorders are low, but an increase has been observed and is projected to be maintained.

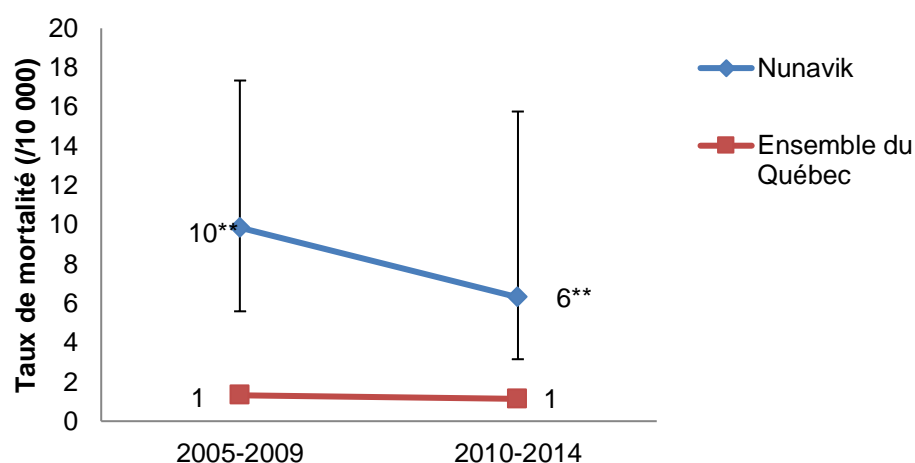
5. Respiratory system diseases continue to be a major cause of hospitalization of children less than one year old in Nunavik. These rates have dropped over the last decade, and projections indicate that they should continue to decrease over the next few years.

3.4 The health of children between 1 and 9 years old

3.4.1 MORTALITY

The mortality of children between 1 and 9 years old is much lower than that of children less than one year old (Figure 24). In Nunavik, the mortality rate of children in this age group appears to have been following a certain downward trend (non-significant) these last few years, but still remain higher than elsewhere in Québec. On average, there are fewer than 2 deaths per year among children between 1 and 9 years old in Nunavik (compared to nearly 10 deaths of children less than one year old).

Figure 24 Mortality rate for children between 1 and 9 years old (/10 000), Nunavik and Québec as a whole, 2005-2009 and 2010-2014



Source: Infocentre de santé publique du Québec.

Notes: It was impossible to do a breakdown by age group (1 to 4 years and 5 to 9 years) and by home coast, due to the small number involved.

**Coefficient of variation greater than 33.33%. The value is presented for information purposes only.

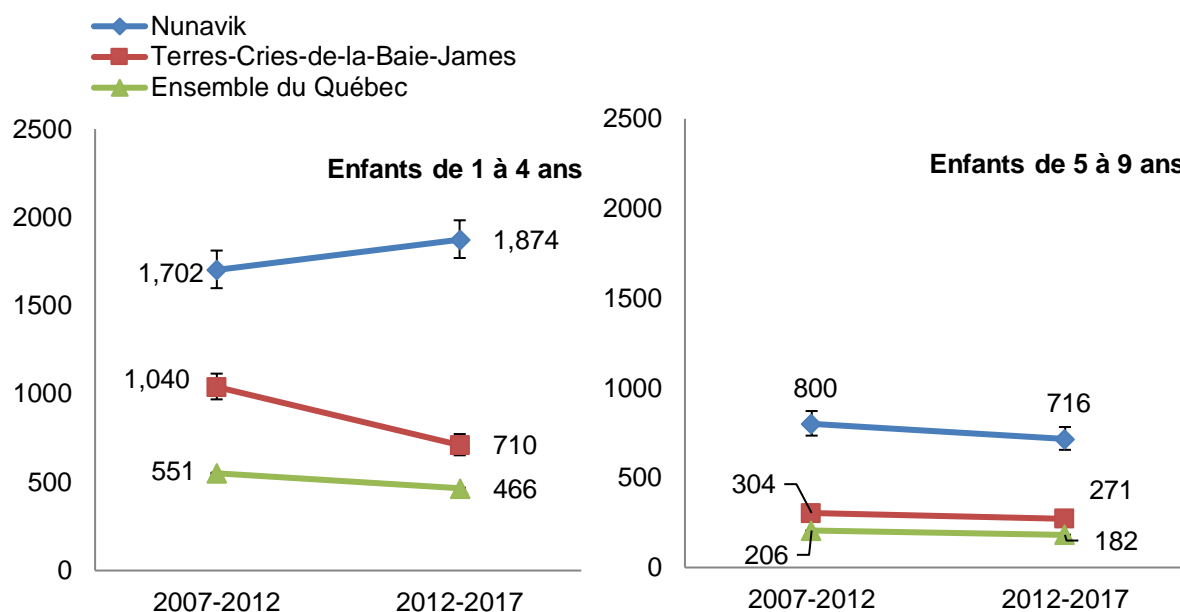
To allow for analyzing the most frequent causes of death, the population of children between 1 and 9 years old had to be expanded to include children up to 14 years of age. This made it possible to observe that between 2010 and 2014, two thirds of the fifteen or so deaths of children between 1 and 14 years old were caused by NIT (not indicated).

3.4.2 HOSPITAL MORBIDITY

Hospitalization rates²⁵ for children between 1 and 4 years old are much higher than those for children between 5 and 9 years old (Figure 25). In addition, Figure 25 reveals that hospitalization rates in Nunavik, while high for both age groups, have stayed relatively stable.

²⁵ Hospitalization rates being higher than mortality rates, it becomes possible to present the former for smaller age groups, namely for children between 1 and 4 years old and for children between 5 and 9.

Figure 25 Hospitalization rates for children between 1 and 4 years old and between 5 and 9 years old (/10 000), all causes combined, Nunavik, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2007-2012 and 2012-2017



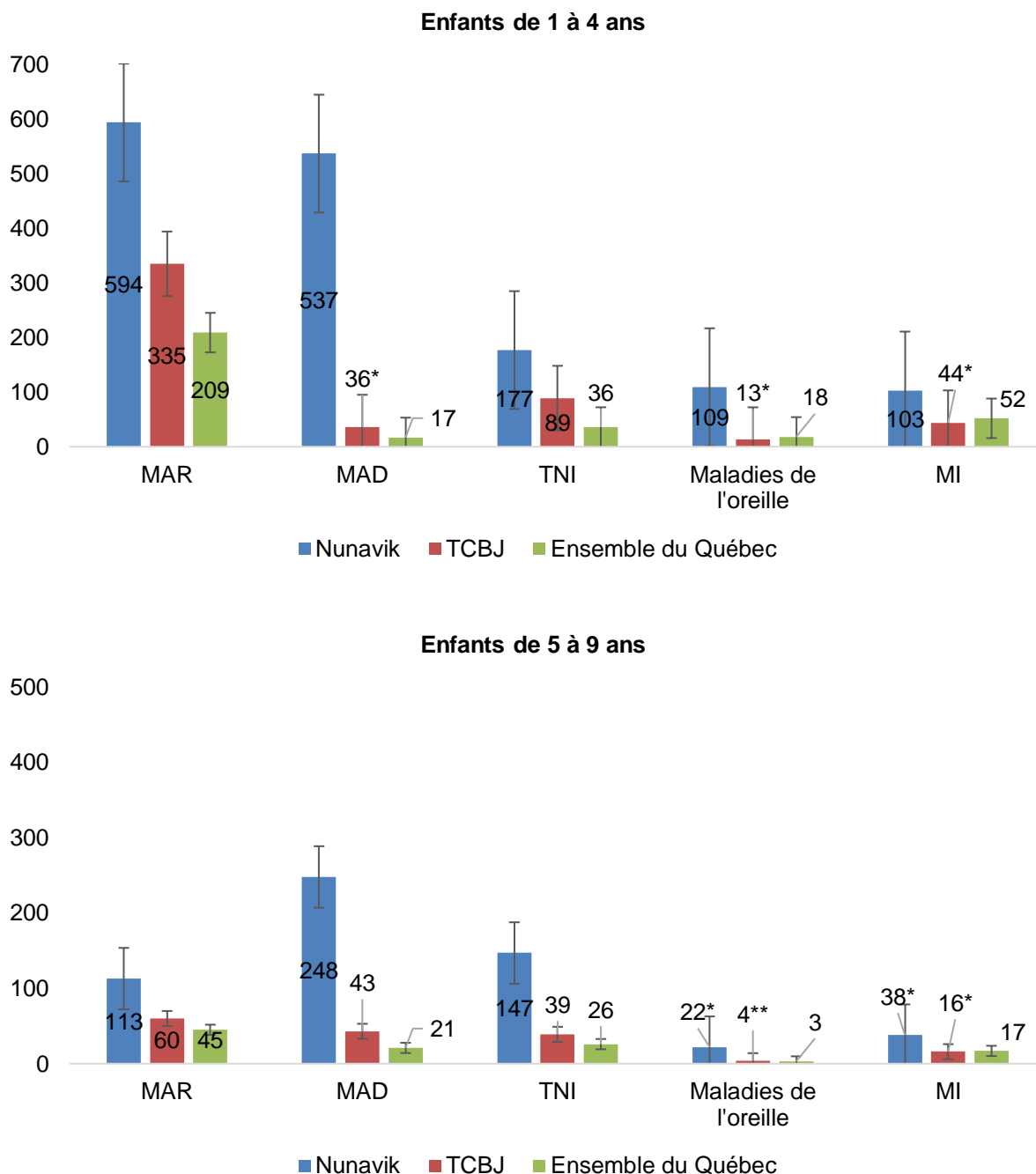
Source: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec.

Among children aged 1 to 4 years, the primary causes of hospitalization are RSD, followed by digestive system diseases²⁶ (DSD) and NIT (Figure 26). These three causes together account for 70% of hospitalizations in this age group (Figure 27). However, DSD, diseases of the ear and NIT are the causes for which the respective variances between the hospitalization rates in Nunavik and in Québec are the greatest (Figure 26).

While children between 5 and 9 years old have lower hospitalization rates than those aged 1 to 4, the major cause of hospitalization for this age group is DSD, followed by NIT and RSD (Figure 26). These three causes together account for over 70% of hospitalizations in this age group (Figure 28). In addition, DSD, diseases of the ear and NIT still have the greatest variances with rates for elsewhere in Québec.

²⁶ DSD include all disorders of the stomach and intestines (e.g., gastroenteritis, appendicitis and hepatitis) as well as diseases of the oral cavity, including cavities (requiring treatment or extraction of a tooth) (Government of Canada, 2020).

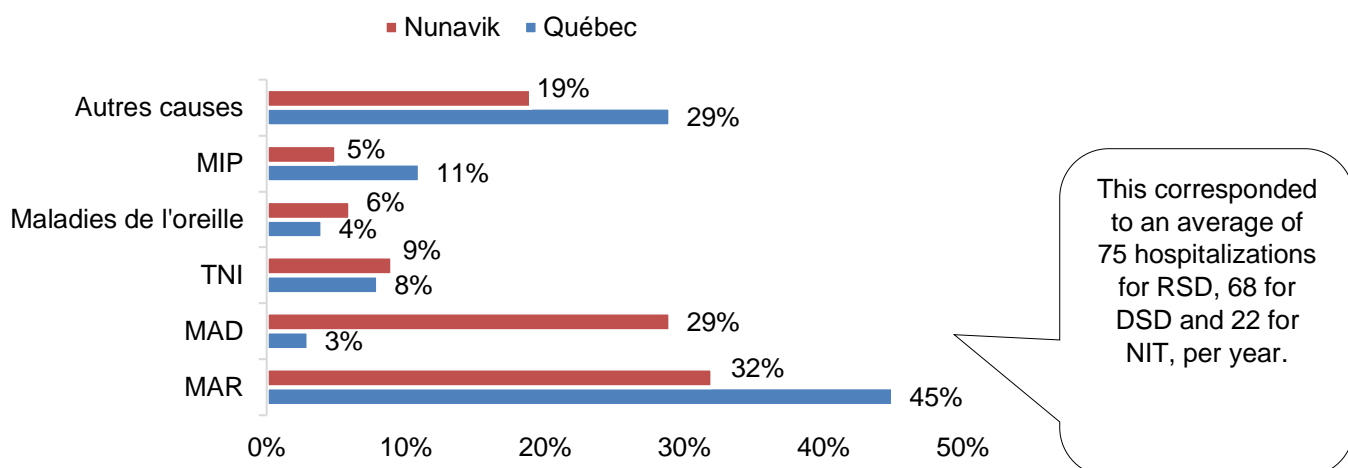
Figure 26 Number of hospitalizations of children between 1 and 4 years old and between 5 and 9 years old (/10 000), all causes combined, Nunavik, Terres-Cries-de-la-Baie-James region and Québec as a whole, 2007-2012 and 2012-2017



Source: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec.
Note: The only rates displayed are those for 2012-2017, given that the changes over time were not statistically significant. ID: Infectious and parasitic diseases.

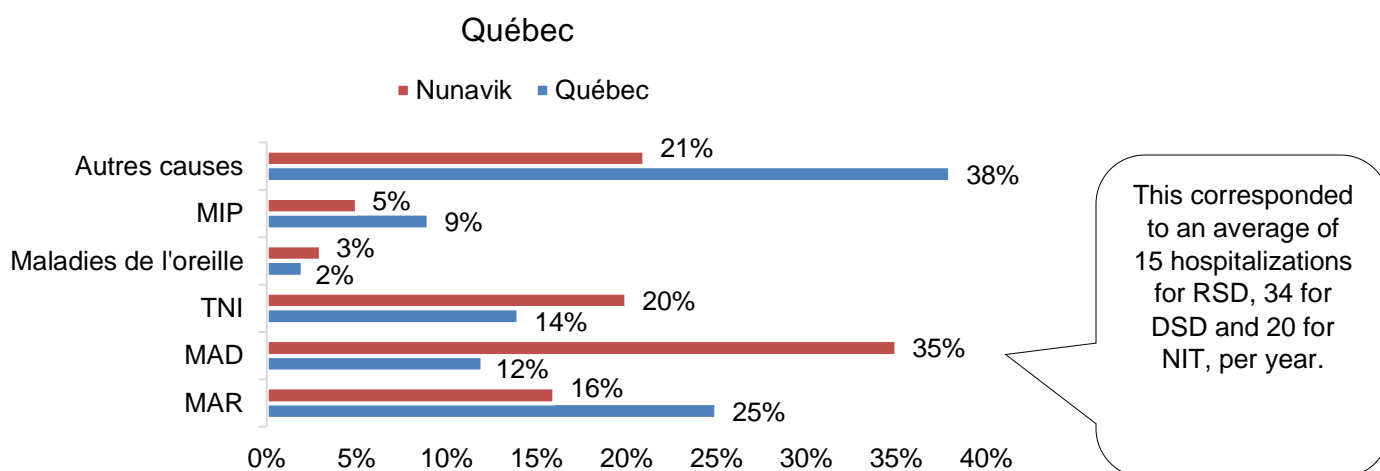
*Coefficient of variation between 16.66% and 33.33%. The value must be interpreted with caution.
 **Coefficient of variation greater than 33.33%. The value is presented for information purposes only.

Figure 27 Proportion of primary causes of hospitalization, children between 1 and 4 years old, Nunavik and Québec, 2012-2017



Source: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec.
 Note: ID: Infectious and parasitic diseases.

Figure 28 Proportion of primary causes of hospitalization, children between 5 and 9 years old, Nunavik and Québec, 2012-2017



Source: MSSS, Register of hospitalizations, MED-ECHO, drawn from the Infocentre de santé publique du Québec.
 Note: ID: Infectious and parasitic diseases.

3.4.3 IN SHORT

1. And while the mortality rates for children between 1 and 9 years old are less than those for infants between 0 and 1 year, they are still higher in Nunavik than elsewhere in Québec. Non-intentional trauma is the leading cause of death among children between the ages of 1 and 9.
2. In Nunavik, hospitalization rates for children between 1 and 4 years old are much higher than those for children between 5 and 9 years old.
3. For children between 1 and 4 years old in particular, nearly 70% of the causes of hospitalization are, by order of magnitude, respiratory system diseases, digestive system diseases and non-intentional trauma. For children between 5 and 9 years old, these same three causes also account for 70%, but not in the same order. Digestive system diseases are first, followed by non-intentional trauma and respiratory system diseases.

4 Conclusion

4.1 Portrait of mothers and the practice of midwifery in Nunavik

The number of children in Nunavik continues to climb, with the average age at which women first give birth being 21. Of late, the number of mothers who had completed a DES at the time of having their first child had grown. This being said, the low level of education among mothers in Nunavik may well explain, or at least partly explain, why nearly one out of every five Nunavik families had an income beneath the low income cut-off in 2014, in a region where the cost of living is higher than elsewhere in Québec (Robitaille et al., 2018). This proportion is closer to one third in the case of single-parent families. Furthermore, with over 40% of people in Nunavik living in lodgings that are too small and overcrowded, we can imagine that a large number of families are still raising their children in extremely difficult housing conditions (INSPQ, 2021a). On another note, the high fertility rates among women under 20 years of age (as noted in the document Sociodemographic background) (INSPQ, 2021a) contributes to the fact that the number of children born of mothers with a DES is lower in Nunavik than it is in Québec.

The number of hospitalizations due to diabetes mellitus in pregnant women increased substantially between 2007 and 2017. This increase could point to a rise in the prevalence of type 2 diabetes among the general population of Nunavik over the last years. Whenever possible, it would be advisable to consider the report *Cardiometabolic Health from Qanuilirpitaa? 2017* to learn more about diabetes among women in 2017 (Allaire et al., [in the press]).

There are about 400 births in Nunavik per year, the majority of them in the region thanks to the well-established practice of midwifery in 4 communities. The greater access to the practice of midwifery on the Hudson Coast may well explain why two times fewer women on this coast (compared to the Ungava Coast) must leave the region to give birth. The success of Nunavik's midwifery program is cited as an example of the effectiveness of the practice of midwifery to promote childbirth in northern Aboriginal communities (NRBHSS, 2015).

4.2 Favourable pregnancy outcomes, despite infant mortality rates that remain high

Birth outcomes in Nunavik are relatively favourable when compared to Québec as a whole, on a number of fronts, more specifically proportion of IUGR, low birth weight babies and the hospitalization of children less than one year old with perinatal disorders. Despite a high rate of tobacco use in Nunavik (Bélanger et al., 2020), the proportion of premature births is the only figure that has begun to climb significantly over the past few years; it now shows a significant variance with proportions elsewhere in Québec. In fact, this increase seems to be in line with the increased cases of hypertension during pregnancy and the associated complications (preeclampsia and eclampsia), which are the leading causes of hospitalizations of pregnant women in the region.

However, the perinatal and infant mortality rates in Nunavik continue to be higher than in Québec, even if they represent an average of fewer than 10 deaths in the region each year. Also, unlike the situation elsewhere in Québec, a large number of these deaths are associated with disorders that occur after the perinatal period (e.g., SIDS and NIT). Efforts to prevent these health issues must continue to be prioritized.

This being said, RSD are still now one of the primary causes of hospitalization of infants under the age of one year in Nunavik. And while the hospitalization rates for RSD have decreased substantially over the past decade, they are still much higher than the rates for Québec. These high hospitalization rates for RSD could be due to the impacts of poor housing conditions (Riva et al., 2020) and exposure to secondary smoke from tobacco users (Bélanger et al., 2020) on the health of children in the region.

4.3 Children between 1 and 9 years old: numerous avoidable hospitalizations

And while the mortality rates for children between 1 and 9 years old are much lower than those for infants under one year of age in Nunavik, they are still significantly higher than elsewhere in Québec. NIT are the primary cause of these deaths. Further efforts with a view to preventing these deaths will be necessary; this could include promoting the use of safety devices and equipment when driving (this topic is addressed in the profile entitled The health of adults and seniors [INSPQ, 2021b]).

Moreover, RSD, DSD and NIT lead to the vast majority of hospitalisations of children between 1 and 9 years old, and DSD, diseases of the ear and NIT constitute the larger variances between rates in Nunavik and elsewhere in Québec. We also need to recall that the support services for young families offered through the *ilagilluta* program are an excellent means of incorporating prevention measures in line with these health issues. Specific actions could include measures to limit the tobacco consumption of parents and prevention measures regarding NIT.

This being said, many families are living with a limited income and in overcrowded housing, which places them at greater risk of contracting various diseases and disorders, both physical and psychological (INSPQ, 2021a). Creating a safe and healthy environment for children will hinge on the social and economic development of the region's communities, which will alleviate the impacts of precarious finances on the health and development of Nunavik's children.

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